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BB45

M.Tech. EXAMINATION, May 2019

(Second Semester)

(B. Scheme) (Re-appear)

EE(PS)

MPS518B

POWER SYSTEM CONTROL AND DYNAMICS

Time : 3 *Hours*] [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Explain, what do you mean by loadability of overhead lines and discuss loadability characteristic of these lines. **15**

2. Discuss in detail will the help off diagram, self-excitation due to Induction Generator Effect. Also broadly classify the methods used for counter measuring the SSR problem and explain each method. **15**

Unit II

3. Write short notes on the following :

(a) Speed Governor **7½**

(b) Dead Band. **7½**

4. Explain the following :

(a) Digital load flow control **7½**

(b) Decentralized control. **7½**

Unit III

5. Explain in detail with neat and clean diagram about boost buck excitation system. **15**

6. Discuss brushless excitation system, with neat and clean diagram. **15**

Unit IV

7. A 50 Hz generator is supplying 40% of power that is capable of delivering through a transmission line to an infinite bus. A fault occurs that increases the rectance between the generator and the infinite bus to 600 per cent to the value before the fault. When the fault isolated, the maximum power that can be delivered is 80% of the original max. value. Determine the critical angle for the conditions given. **15**

8. A synchronous motor in received 35% of the power that is capable of receiving from an infinite bus. If the load on the motor is doubled, determine the maximum value of load anlge δ during the swinging of the motor around its new equilibrium position. **15**